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Mapping mineral resources in a living land: Sami mining resistance in Ohcejohka, northern Finland

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ABSTRACT

During the past decade, Finland has been the target of a global boom in the quest for untapped mineral resources. Based on the mapped information of mineral potential provided by the state, multinational mining corporations are making reservations for and conducting mineral explorations particularly in Finland's peripheral regions. This paper investigates the emergence of an anti-mining movement in Ohcejohka, in northernmost Finland, in 2014–2015, and the ontological conflict manifested in the outside mapping of the land as “mineral rich” as well as the local people's various knowledges of the land as a lived place. By producing a holistic counter-mapping of their social, ancestral and meaningful landscape, the movement questioned the state's and the company's homogenising knowledge in the production of land and resources. While the reality-making effects of modern maps have previously been studied, the entanglements of such mappings in environmental conflicts with local ontological realities and knowledge spheres have not been extensively studied. This paper argues that rather than imposing a “one world ontology”, maps and mappings of land and resources are culmination points in environmental conflicts, where they become renegotiated, challenged and redefined in the local and dynamic enactments of reality.

1. Introduction

In recent years, the extraction and use of raw materials has intensified around the globe. It is estimated that due to the growing needs of industries and consuming classes alike, there will be a further increase in raw material extraction, along with its detrimental social and environmental effects (UN, 2016). New geographical locations become entwined with global resource industries and a state's existing land control practices, which lay claim to and territorialise land for its natural resources (Peluso and Lund, 2011, 668). Finland, and particularly its peripheral regions, has been one of the key targets of the recent global boom in the quest for untapped mineral resources (Kröger, 2015). Many kinds of resistance movements have followed this boom in several places (although this has not occurred everywhere). This paper investigates the emergence of a mining resistance movement and claims for space in 2014–2015 among the indigenous Sami and other community members in the village of Ohcejohka,² in northernmost Finland, in response to the mineral prospection plans of a multinational company. The resistance movement, called the “Anti-Mining Coalition of

the Deatnu Valley”, emerged after the company Karelian Diamond Resources (henceforth KDR), a company in partnership with the multinational Rio Tinto, had reserved an area of the Sami lands for preliminary investigations for mineral exploration.

The paper studies the development of a local resistance movement in Ohcejohka, where the scientific imagery of the mineral-rich area and the circulating rumours about rich underground deposits are an important means of creating the place anew and yet also stimulate resistance efforts and the organising of counter-knowledge. As the people in the resistance movement challenged the visions of mineral extraction that came from the outside, they renegotiated boundaries and articulated plural understandings to replace homogenised worldviews of nature, land and resources. The movement actively communicated such knowledge by sending complaint letters to the court and mining companies. The local resistance resulted in the mining company Rio Tinto eventually responding to the activists and KDR withdrawing the reservation.

A central question to be examined in this paper is whether an outside vision and mapping of a place as mineral rich, even if this vision is

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² Most of the place names in the paper are in the northern Sami language, the language spoken by the Sami in the region. Other Sami languages spoken in Finland are Ánár Sami and Skolt Sami.

based on speculation and guesswork, affects the local people's relationship to their land. I am especially interested in whether this triggers or makes visible the local, differing understandings of land relations: Through what kinds of knowledge practices and counter-narratives do the indigenous Sami people possibly make and represent their reality differently than that found in the outside representations of the land as "mineral rich"? As Boucquey et al. (2016) have noted, people are not just passive consumers of the environment or comfortable with their stakeholder position, as indigenous peoples might have profoundly different and varied relationships to the environment from an ontological standpoint than the decision makers expect.

While the social and environmental impacts of large-scale mining excavation have been widely studied (e.g. Nash, 1979; Ferguson, 1999; Bridge, 2000; Banks, 2002; Horowitz, 2004; Kirsch, 2006; Robbins, 2006; West, 2006; Akiwumi, 2012; Bebbington and Bury, 2013; Gilberthorpe et al., 2016), there is a need to also study how contemporary mining struggles in the Nordic countries form and how resistance is produced, and even more so, how places become contested due to differing knowledge spheres and ontologies regarding "nature". Typically, academic inquiries that focus solely on the social or environmental impacts of mining as a research subject examine sites where mining excavation has already occurred and where the material and social impacts are visible and being immediately experienced. Much less work has focused on the perceived threat or initial stages of mining exploration in areas that are new to extraction, especially in the Arctic regions. Looking at these initial stages of mining, when speculation over possible mineral resources is more dominant than an actual mineral reserve, and focusing on the local community's ways of responding to such speculations, are essential to understanding what kinds of people's existences are at stake, why people mobilise and the means by which they articulate and represent a different relationship to the environment than the one proposed by the state and the mining companies.

The path from prospecting to opening up a mine is typically long and tumultuous, and very few mining projects result in notable physical changes to the land – this is especially the case in contexts involving the rule of law and the harsh Arctic environment. However, even mines on paper have impacts, many of which have nothing to do with mining itself, as I will discuss here. I illustrate how in the initial phases of mining the mapped and scientific data about natural resources becomes significant in creating visions and defining areas as "mineral rich", in reducing areas to merely extractive futures. Prior studies have shown how mapping has the power to articulate and create new realities (Harley, 1989; Scott, 1998; Wood, 2010; McCarthy and Thatcher, in press; Fogelman and Bassett, 2017). Maps that delineate land and resources further emerge from what many theorists have argued is the *ontological* divide between nature and culture inherent in modern, capitalist societies, which view nature as a commodity and external to humans (De La Cadena, 2010; Blaser, 2013; Descola, 2013; Moore, 2015; Escobar, 2016). What has not been extensively studied is the effects of such environmental conflicts at the local level, where differing ontologies clash and where mapping functions as a central reality-making process.

This paper argues that maps and mappings of the land as knowledge practices and enactments of reality actively become part of the ontological, environmental conflicts over natural resources and participate in the negotiations present in those conflicts centred on the crucial question of how life will continue in particular places. Maps and mappings of land and resources are culmination points in environmental conflicts, where they become renegotiated, challenged and re-defined in the local and dynamic enactments of reality. These moments of contestation are moments of "friction" (Tsing, 2005), when "action and effect" are produced and things change. When the mapping of places as resource rich enters local ontologies that exist beyond the dualist nature/culture divide, where people have long-standing but also invariably evolving relations to a place, to the landscape and its

nonhuman and spiritual aspects, the outside mapping may stimulate the creation of counter-knowledge against the claims coming from the outside. The paper shows how local resistance enacts reality by relying on to their own "mapping" of the land and sends a positive, internationally salient signal that land holds plural values locally and is not open to untrammelled penetration by the mining industry.

The case brings out especially well the overall incommensurability of mining and the indigenous Sami way of life in northern Finland, where mining currently poses substantial threats to the rights and livelihoods of the indigenous Sami. The structure of the paper is such that after briefly describing the methodology used, section two discusses the theoretical and conceptual background to the paper and provides a starting point for further analysing the empirical material that follows in section three. Sections four and five offer some discussion and concluding comments on the case study.

1.1. On the methodology and material of the paper

The data for this paper was gathered while conducting ethnographic fieldwork in Ohcejohka in the summer of 2015 as well as from secondary literature, such as available news articles. Most of the data came from interviews that I conducted and recorded with Ohcejohka residents. The interviews followed a natural course, meaning that the interviewees themselves determined the main direction of the interview. The interviewees were selected following a "snowball" effect, such that one interview led to another. Additionally, I interviewed several people working for government institutions, a representative of the state land owner Metsähallitus, a representative of the administrative court and two representatives of the Geological Institute of Finland. Typically, mining in northern Finland is both favoured and resisted in municipalities. In this case, the resistance was nearly unanimous and I wanted to explore the reason why. I discerned that the resistance had a cosmopolitan character but that the main strategies of creating counter-knowledge gained their strength from a place-specific knowledge of the land area that KDR had reserved. That is why I decided to frame my research mainly around the indigenous Sami characteristics of land in Ohcejohka. In addition to the Sami counter-narrative of land in the region, I concentrated on the strategies of the resistance movement, which emerged from a mix of knowledges. I interviewed those who had actively participated in the resistance movement and persons who had followed the events more as onlookers and had not been active in the resistance.³ I began analysing the interview data already during the fieldwork phase.

2. Mapping and counter-mapping natural resources

In this section, I discuss the key theoretical and conceptual starting points of the paper to shed light on the tensions present in the case study. The question of differing ontologies is meaningful, i.e. how the world is actively made and enacted. Ontological plurality as a concept has gained importance in research on environmental relations and the local processes of resource exploitation. The world is not a universe, but a pluriverse, composed of many different human and nonhuman worlds, as Viveiros de Castro (2004), De La Cadena (2010) and Blaser (2013) have argued. Contrastingly, maps serve as critical tools for what many theorists argue is the transformation to the particular modernist ontology of a universal world, the "one world" vision of capitalist globalisation, which at its core is based on the nature/society divide that currently impacts territories and defines spaces everywhere (De La

³ As a researcher coming from the capital area in southern Finland, one with no Sami connections, I was an outsider to the case. The events originally caught my interest when I read a small news item about the reservation process and resistance in Ohcejohka in the national news broadcaster's local news in the winter of 2014.

Cadena, 2010; Law, 2011; Blaser, 2013; Moore, 2015; Escobar, 2016). In Europe, the practice of making maps and the overall visual cartography of the world have been fundamentally bound up with the expansion of colonialism and the rise of early capitalism (Pickles, 2004; Bleichmar, 2006; Wood, 2010; Descola, 2013; Moore, 2017). In this epistemological framework, natural resources as commodities grow out of complex wholes for the benefit of the state-capital nexus, and people's oral traditions, local knowledges and place-based and human–nonhuman relations become invisible (Harley, 1989; Scott, 1998; Gill, 2015; Tsing, 2000, 2005; Boucquey et al., 2016). While Massey (1994, 2005, 3) argues that space is constructed from a multiplicity of interrelations, in the tradition of European and colonial thinking space is defined as a flat surface to be conquered, one where people appear more as mere “phenomena”. Hence, an absolute space, as Smith (2008 [1984]) has argued, is made abstract and separated from the specificities of human spatial activity.

Based on the data gathered for this paper, it seems that the visual, scientific imagery of minerals, namely mineral maps published by the state research institution, Geological Institute of Finland (henceforth GTK), confirm expectations regarding resources. The observation reasserts the view that maps not only make the world, they equally respond to the hopes of various states and capitalist projects as to what could exist (McCarthy and Thatcher, *in press*, 40). Mapping natural resources, such as minerals, thus produces land as an investible resource for the future and paves the way for actual operations. By publishing mapped data, such as the GTK's “Hakku” database that the mining companies can easily access on the internet, state institutions play a key role in an “objective” and scientific but, in truth, powerful knowledge production and reality making endeavour. GTK's stated aim is to advance mining industry operations. In Finland, it is permissible to make reservations for preliminary investigations and conduct mineral exploration everywhere. Even minimal legal protection against mining industry activities on Sami lands is not sufficient, especially in the first phases of such activity, such as in the reservation phase that was in place in Ohcejohka. Clearly, this science and these policies do not reflect the various realities of human relationships with the environment, but are reflections of a particular knowledge and property regime that dominates thinking and becomes translated into institutional arrangements (Scott, 1998, 47; Adger et al., 2001, 685, 709). The availability of mineral data is an arrangement where the state prioritises and institutionalises a certain knowledge of the land over others.

In the case under analysis in this paper, two contesting ontologies of land can be observed. One ontology is held by a modern, capitalist state that draws lines around natural resources and maps and classifies certain places as “mineral rich”; the other is based on a pluralistic, relational ontology where the land is alive with ancestral and social meanings. The situation can be investigated as two different types of “worldlings”, enactments of the world, interfering with one another to such an extent that an ontological conflict emerges (Blaser, 2013). As Blaser argues (2013, 555), in a modern story premised on the separation of nature and culture, conceiving of difference through hierarchy and linear time are a totality to which other worldlings, or what Tsing (2015) calls “world-making projects”, are a threat.

Nevertheless, worldlings might come to challenge the futures of land predefined from outside, as this paper shows. The local entanglements of resource mapping with ontologically differing realities and their local knowledge practices have not yet been extensively studied. This paper illustrates that maps and visions of the exploitable resources they embody in environmental conflicts do not necessarily imply a straightforward and forced “one world” ontology. The initial phase of mining can offer a chance to imagine a different world rather than perceiving a self-realised future (see Tsing, 2005, 269). Or rather, it provides a chance to actively enact the world and influence its course. In this paper, the practice of modern mapping evokes a process whereby mapping actually has uneasy access to the world it aims to change. With maps functioning in a world that is constantly actively being made, a

space remains open for unexpected outcomes to develop. This becomes particularly clear when we look at the local counter “mapping” of land in Ohcejohka.

Who has the power to make and define reality becomes significant when a mine is still only a possibility with an undetermined future. How can knowledge be organised through other, Sami realities, wherein the land is not empty of people? Dynamic local knowledge is produced through encounters and is not static but can be repositioned and organised (Cruikshank, 2006; Ween, 2012; Hastrup, 2014). In this paper, counter-knowledge practices emerged from an encounter between industrial and scientific claims to resources on indigenous lands, where people's relationship to a place is fundamentally bound up with an overall existence, lifeworld and imaginable future. The counter-knowledge produced stems from a mix of existing local knowledge and new knowledge of the land, which people explored during the course of the resistance. Knowledge of the land's ontological meaning was then articulated and organised for the purpose of resistance. Above all, it is false to think that local communities experiencing the impacts of large-scale industrial projects are powerless to confront representations of their land by outsiders as mere resource sites. Roe (1991, 1995) has argued that a “better story” must be told for the creation of counter-narratives in relation to “blue print views” and the official chronological narratives represented in policies. Marginal groups have different sources of power and they must be creative in uncovering and mobilising power and asserting counter-claims to scientific knowledge (Horowitz, 2012, 7).

Counter-maps have been seen as a tool of protest and empowerment for activists and local people trying to defend their customary lands against the state's and companies' simplified imageries of resources (Peluso, 1995; Wood, 2010; Bryan and Wood, 2015). The goal of counter-mapping is to appropriate the state's mode of representation and redefine customary rights. Counter-maps can depict the multiple and overlapping domains of resource use, land use, property regimes and gendered livelihoods in contrast to the government's dominant land-use categories (Brody, 1982; Rocheleau, 1995). Counter-maps as singular, technical objects do not necessarily fit into the local knowledge of the environment in its totality. With this in mind, the distinction made by Ingold (2000) between the practices of “map making” and “mapping” offers a starting point for a study contrasting modern and indigenous understandings of a place. “Map making” is, in Ingold's definition, connected to the scientific and instrumental model, where a concrete 2D map is produced, but “mapping” can occur through the practice of “wayfinding”, as a project revealed in the course of moving about and sharing information, memories and stories of the land. Counter-mapping, understood as an all-encompassing, social process of unravelling the land's locally meaningful aspects, can make use of a technical type of 2D map making, but is not limited by it. Peluso (1995) argues that what may be even more important than new maps as objects is instead the content that is produced through the projects of mapping and how knowledge and information about the land are conveyed. In their study of the creation of investable land in Lesotho, Fogelman and Bassett (2017) further underline the social and power relations that make maps function in the world. Maps are instrumental, but mapping is a processual enterprise. Following a similar line, land can be rendered as more than a commodity, more than simply a mineral-rich space, when it is represented and mapped in a holistic way, as a territory investigated and narrated socially in terms that are ontologically meaningful for local people, as the following case study demonstrates.

3. The Anti-mining coalition of the Deatnu Valley: How resistance was formed

I now turn to describing the movement that emerged in Ohcejohka to challenge the mineral visions that came from the outside. After first describing the beginnings of resistance to mining, I continue by briefly describing some historical and contextual guidelines, followed in

Sections 3.2–3.4 by a presentation of the type of counter-knowledge and counter-mapping that was produced and circulated to contest the representation of the land as mineral rich.

In May 2014, the Finnish mining permit authority Tukes published in the local newspaper for the Ohcejohka region a reservation notification by the Irish mining company Karelian Diamond Resources. The place where the reservation was made is situated in a 900-hectare area, in Ohcejohka municipality, on indigenous Sami customary lands. The area that KDR had reserved for preliminary investigations included the shoreline of the Ohcejohka River, adjacent to the large Deatnu River, which forms the border between Finland and Norway and is the third largest Atlantic salmon river in the northern Hemisphere (known as *Tana* in Norway). The area belongs to the strictly enforced environmental protection area of Kevo; most of the rest of the area is part of the European Union Natura 2000 environmental protection network and the Paistunturi and Kaldoaivi reindeer herding districts. The central spot reserved by the company was a fell known locally as Jeagelvárri, “Lichen Fell”. Interestingly, it is a multinational company, the Australian-British Rio Tinto, which is behind KDR’s operations in Finland. KDR is currently in a confidentiality agreement with Rio Tinto, which has the right to earn a 51% interest in KDR’s projects in Finland. The announcement proclaimed that KDR wanted to conduct investigations based on earlier mapped and collected data provided by GTK, indicating the presence of the mineral kimberlite in the area, which means a potential for diamond. If more positive signs of minerals are found, KDR will have the priority right to apply for the actual mineral exploration permit.

When the notification regarding the reservation was published in the local newspaper, the plans of the company quickly led to resistance in Ohcejohka and nearby areas both in Finland and Norway. In a general meeting held in June of 2014, in Ohcejohka, “The Anti-Mining Coalition of the Deatnu Valley” was formed consisting of people both from Ohcejohka and nearby municipalities. It was decided that a complaint would be filed with the administrative court of northern Finland (henceforth HAO). The complaint letter was sent to HAO in June 2014, and it was followed later by letters to the KDR, Rio Tinto and the government. During these early reservation stages, before actual exploration, an official complaint to the court does not have much power in juridical terms, but the activists wanted to act early.

While the KDR reservation was for one spot, the influence of the reservation extended beyond state borders because of the Deatnu River as a unifying concern for the wider area, hence the movement’s name, which addressed the entire region. Consisting of approximately 50 people, the movement included people from both the Finnish and Norwegian sides of the border. Most of the participants in the movement were Sami. Other people were involved as well, but they supported the claims of the movement, which were formulated according to the traits of this distinctly indigenous region of Finland based on its culture and livelihoods. Ohcejohka has a majority Sami population, and the municipality belongs to the Sami homeland area (*Sápmi*), the traditional living and cultural region of the Sami in Finland, Norway, Sweden and Russia. For the Sami, the state border is not so significant because the homeland, family ties and cultural connections extend beyond it. The Sami on both sides of the Deatnu River have inhabited the region for thousands of years, and the many fells and river valley are sacred to them. Mining plans and the effluents from possible future mining in the vast region are especially feared because of the cultural and historical importance of the Deatnu River and its adjacent rivers throughout the valley, especially through their wild salmon, to the identity of the Sami people both in Finland and Norway. Interviewees frequently described the Deatnu River and its distributaries, including the Ohcejohka River, as the “heart” or “veins” of the whole region, connecting people and traditions of movement and fishing to a wider sociocultural and ancestral network.

After the initial June meeting in Ohcejohka, where the resistance movement was established, participants created a network that

communicated mainly via a mailing list and a discussion group on Facebook. Both men and women were involved in the resistance, including a number with professional skills. One participant had a background in legal studies, and he was involved in writing the complaint letters. Another person was a biology teacher with much knowledge about the region’s flora and fauna. One participant created a web page for the movement, where all the information was gathered and archived, e.g. the reservation notification, a map of the reserved area, a geomagnetic photo of the speculated mineral reserve and the resulting complaint letter of the movement. It is notable that the website functioned as an archive throughout the resistance, and participants gathered much information and evidence in case a longer battle would follow. The web page can be seen as a documentation of what went on, and it remained so after the process was over.

3.1. Historical and industrial developments in the region

As a matter of historical continuity, the contestation over the environment between the local use of and state control of land and resources has been constant in the area of the Deatnu valley as a whole. Ween (2012) has described the Norwegian state’s fishing regulations on the Deatnu river as still embodying the colonial and recent postcolonial history in the region, where the same patterns of conflicting ontological and epistemological claims over the environment can be observed as came to a head in Ohcejohka. Historically, the establishment of state borders in the region already signalled the beginning of commodifying and delineating of land irrespective of its indigenous population. The Sami homeland above the Arctic Circle was the target of border politics by Sweden, Norway, Denmark and Russia in a way that greatly affected the Sami living near those border areas since the treaty of 1751, and several times after that, with stricter regulations and changing relations between the states (Lantto, 2010, 545). The population and their common land areas were divided between the states in a way that was foreign to the Sami. After the closing of the Finnish-Norwegian border in 1826, cross-border reindeer grazing and free movement became more difficult for the Sami in Ohcejohka, who had herded their reindeer along the shores of the Arctic Ocean, and they thus had to move to Norway or closer to the eastern border (Nahkiaisola, 2006, 174). The Russian border, established after Finland’s independence in 1917, further limited land use possibilities for the communities, such as the Skolt Sami, who had to be relocated from Russia to the Ánar region (Lantto, 2010; Nahkiaisola, 2006). While Ohcejohka has been central in these border politics, its location has aided in its fairly autonomous indigenous position. In the 1920s, Ohcejohka was known for its failure to comply with the development imposed by the state, such as allowing for state-built infrastructure or recognising Finnish authorities’ power (Lehtola, 2012, 222). Its close ties to the Sami on the Norwegian side of the Deatnu River were seen as problematic by the state, which perceived of Ohcejohka’s local politics as nothing less than a separation movement, but these ties were an asset for the locals (Lehtola, 2012). In addition to reindeer herding, Ohcejohka has economically benefited from the possibilities of retail and wild salmon tourism that the location provides.

Increased mining pressure is the most recent attempt at resource extraction and evidence of the state’s land commodification practices in northern Finland, such as the quest for hydroelectricity production and timber harvesting. The KDR reservation is an example of the new industrial development, where areas like Ohcejohka, which had not previously been the main targets of these earlier industries, have gained the attention of an unseen mining interest, a phenomenon that can be called an “Arctic land rush” (Kröger, 2015), and that has prompted struggles against the mining industry in other parts of the Sami homeland as well. In Finland, most of the state-owned mining industry was shut down towards the end of the 1990s. The state-led mining operations were not profitable given the global decline in mineral prices. In the mid-2000s, Finland experienced a new mining boom

when foreign companies started to make claim reservations for mineral prospecting, especially in mineral-rich northern Finland. In part, the pattern has been linked to an overall acceleration in natural resource extraction and mineral expansion globally and to the growing economies of China and India and their escalating need for minerals and building materials (Bebbington et al., 2008a). With a politically and economically safe climate and low taxation, Finland is now one of the most inviting countries for the mining industry globally (Stedman and Green, 2017, 9). Nonetheless, the free access to mineral data that was made public at the end of the 1990s has been a decisive factor in facilitating early reservation and exploration processes from the other side of the world, as told by a mining company representative in a discussion with the author.

The Sami are in possession of traditional local and inherited usufructuary rights to the land and water areas that existed long before the Finnish state. The approximately 10 000 Sami who live in Finland have constitutional rights as an indigenous people. They have the right to their language and culture and the right to practice their traditional livelihoods in their customary lands, such as reindeer herding, fishing and hunting. Although many Sami live outside of the homeland area and move to larger cities to study or work, the connection to customary lands remains strong. The Sami Parliament (their representative self-governing body) can discuss the decision-making process regarding projects, such as mineral exploration, that would influence Sami livelihoods. The Sami Parliament in Finland has fortified its political decision-making power over the years and, in 2016, negotiated a joint agreement with the neighbouring Swedish and Norwegian states and their Sami Parliaments regarding a unitary legal position on Sami rights. Both the Council of Europe (Ministry of Foreign Affairs in Finland, 2012) and the United Nations Human Rights Committee have urged Finland to fully support Sami minority rights. The principle of free, prior and informed consent should be applied in all industrial projects that influence the Sami (UN, 2013). But Finland has not ratified the ILO169 agreement, which ensures this right. A continuing source of friction is that approximately 90% of the Sami lands are still governed by the state (Sami Parliament in Finland, 2005), and the subsoil is also owned by the state everywhere. The Sami Parliament in Finland and the various Sami communities' chances of influencing the decisions concerning state-governed Sami customary lands and their mineral resources have not been met.

3.2. "We live here and we exist"

With these regional histories of land confinement in mind, the current and following sections present and analyse in detail the resistance movement and the counter-knowledge it produced to combat outside definitions of resources. Even though people from the Norwegian side of the Deatnu river and some other nearby municipalities were involved in the resistance movement, the heart of the resistance was in Ohcejohka and the resistance gained much of its strategical power based on the close knowledge that people namely in Ohcejohka possessed about Jeagelvárri fell and its surrounding areas. For that reason, I now focus on the wider narrative expressed particularly by the Sami interviewees regarding their relationship to their customary lands in Ohcejohka. It can be identified as a counter-narrative and counter-knowledge that contests the plans and visions that the mining company and state imposed on Sami lands. In this narrative, which the movement then articulated in simplified form to the outside via complaints, the land became characterised in people's own terms as lived, meaningful, ancestral and social.

The reservation notification combined with scientific facts and mapped representations of the land forced people to suddenly realise that something lay underground, that there is a natural "anomaly" buried beneath Jeagelvárri. The anomaly can be seen in a geomagnetic photo and map of Jeagelvárri fell taken between 1973 and 2007, in a period of nationwide geologic airplane measurements conducted by

GTK. The photo of this anomaly circulated among people in Ohcejohka and contributed to the current resistance. There was much speculation and imagining linked to the actual material conditions of the subsoil, which had been proven in the photos, as the comment by this local woman demonstrates:

They haven't found any minerals, but they have been looking at these geophotos taken by planes and so they have seen that there has been volcanic activity, or there could have been—because it's like I don't remember the name of it—some kind of tunnel in the ground, which means that it is possible there will be diamonds. (Interview in Ohcejohka, August 2015, interview conducted in English)

The imaginaries of a mining project, its consequences for Jeagelvárri, the area's reindeer pastures and the salmon-rich rivers, and the way in which people described their relationship to the land in interviews were all based on a close, tactile knowledge of the landscape imbued with profound ontological meaning. People revealed in the interviews that they were worried about the effects that the mine would have on the river system, on reindeer herding and on the ancestral landscape. They also expressed concern about its impact on community structure when numerous mining workers from outside the region would suddenly move into the small settlements. Interviewees expressed apprehension both about the environmental and the socio-cultural effects of mining in the area.

Interviewees told about how they live according to the cycle of seasons and the changing land use practices connected to the rivers and the fells surrounding Ohcejohka. For example, Ravna (personal communication, 2015) from Ohcejohka explained how she and other people have personal relationships with the various aspects of the land through their own activities and movements, through reindeer herding, hiking, fishing, berry and mushroom picking, and hunting. All of these aspects encompass the totality of living in relation with the land. In the following sentence, another Sami woman with small children succinctly summarised life in the river valley as the basis for everything:

We live here and we exist. (Interview in Ohcejohka, August 2015; author's translation from Finnish)

The threat of a mining project was a threat to her community's and family's existence, to her children's future and to continuity of life in the "home valley". Her husband's traditional fishing and moose hunting grounds are situated in the Jeagelvárri area. She described how life continues through the different seasons. Aside from her day job, the dark winter months from November to January are concentrated around indoor activities, such as needlework or spending time with the family in the house. After Christmas celebrations, the wait for the approaching spring begins, and slowly the sun starts to shine. From February onwards, ice fishing, skiing, sleighing and other outdoor activities are common. In the spring and summer, life is focused outdoors. In August, when the berries and mushrooms have matured, "if the weather is good, every day we go out with the children" she explained.

Fishing in the Deatnu River and along the nearby tributaries forms a central part of local knowledge about the environment. Fishing practices during the summers are comparable in Ohcejohka and on the Norwegian side of the river. Most other aspects of life stop for men and the conversations about salmon catches, stories of the past and this summer's fishing experiences are ongoing (Ween, 2012, 157). The Sami often fish in the Deatnu River using traditional methods, such as nets, trolling or rods. Fishing occurs in the rivers and lakes in between the fells as well. People have their favourite places that they always return to. For people in the communities along the Deatnu River, salmon fishing starts towards the end of May, and salmon fishing provides local people with work in the tourist industry too. One man told of how the Deatnu River is still quiet before the start of the salmon-fishing season for tourists, and how this particular time of calm is especially meaningful for him:

My best memories of the river are from the times at the beginning of summer when it is all quiet. It is not so much related to the fish but to the silence. (Interview in Ohcejohka, August 2015; author's translation from Finnish)

The place of KDR's reservation was on the border of the region's two reindeer herding districts, Kaldoaivi and Paistunturi. For the reindeer herders, as one herder explained, the value of land is in its vastness and cleanliness, which provides pastures for the reindeer to roam free and without interference. The landscape consists of reindeer paths and specific places, such as Jeagelvárri, that the reindeer need for calving. The reindeer herders follow a cycle, where the reindeer round-up takes place in October–November, where in winter time the reindeer are herded in their specific winter pastures, and where in the spring reindeer calves are born and must be marked. In the summer, many herders turn to salmon fishing and not many activities are connected to herding at this time. The seasonal cycle of the reindeer extends beyond reindeer herders, since it is a way of life in which family members and other community members participate and that provides reindeer meat for the communities and markets in the fall.

The Sami in Ohcejohka articulated the meaning of the land in terms of generational and seasonal continuity. The interviewees underlined the connection between livelihood, social relations, language and the environment in their traditional knowledge, which Porsanger and Guttorm (2011, 11) have described as the collective wisdom employed by the Sami for centuries to strengthen their livelihoods and cultural continuity. It is transferred through generations via work and practical experience, and in this way the past, present and future are all bound together. With such knowledge, the relationship to the land is inherent. As Helander-Renvall notes (2016, 65), all places and lands have their different characteristics, and Sami life and lands are linked to activities, stories, songs, myths and memories, to an overall experience of home and identity. Landscape is social. Such a relationship to the environment was described by one local man with small children. He told me of the time when the mining plans had been revealed and what kinds of thoughts had gone through his mind:

Because, for me, the memories of past generations belong in nature, in the cultural landscape; when I walk in the forest or do anything, I know constantly that the feet of my ancestors have trod that ground, even though I don't see their tracks. And I have children. I want to leave my children and my possible grandchildren this same land that my ancestors left me [...] (Interview in Ohcejohka, August 2015; author's translation from Finnish)

In various ways, the land was described as being in a continuous, living and dynamic relationship with people's existence and routes through the area. The interviewees stated that every individual action in the landscape becomes part of a cultural continuity, where the previous generations' paths cross those of the people living now, and the actions made today extend to those that will live in the future. While the mining company's aim was to seek profit from under the soil, the Sami people expressed how the land for them is full of reciprocal, spiritual and identity-making meaning. The land cannot be separated from its people and from previous generations. One part of the land cannot be reserved for mining without it having an effect on the whole community, whose life is based on movement and use of land in a wide space.

3.3. How the local knowledge was organised

The actual strategies of the resistance were formulated in relation to the Jeagelvárri and its surrounding areas that KDR had reserved, with the Deatnu River as a broader regional concern. What became important was the overall counter-mapping of the land through the social project of resistance, produced via a mutual sharing of local knowledge of the land that the mining company had reserved, and making notes on

its important aspects. Not only was information that was already known organised, but new or lesser known features of the land also became revealed. Participants in the movement who knew Jeagelvárri and its surroundings especially well organised two collective trips on foot to the area. On the trips, the first made in early June and the second later in the summer, the territory was investigated and information gathered through observations, lists and discussions. The trips played an essential role in the all-encompassing method of “mapping” according to local people's terms. Most important in this method was that the values of the land, described in Section 3.2, could be socially shared and reflected upon in a safe atmosphere and common ground for the resistance established. A local man who had moved to Ohcejohka from elsewhere described the trips as follows:

It was a beautiful day in June. We went around the whole area; there were many people, and we crossed over there by boat. We spent the whole day there [...] This mining resistance was a social event [...] After this, I got to know many new people even though I've already lived here for 15 years. (Interview in Ohcejohka, August 2015; author's translation from Finnish)

On the trips made into the landscape, the area was mapped in an integrated sense. Returning to Ingold's (2000) concepts of map making and mapping, the area was processually mapped through wayfinding, exploring and circulating oral knowledge of the land. People, both Sami and the other people involved, shared in the process of combining stories and memories, disseminating historical and biological information and conveying the different uses and features of the land. On the trips, people noted that in the past the area had been an ancient deer hunting ground, and the hunting trap pits from that activity were still visible in the ground. Other marks showing that people have been using the area continuously, such as old stone constructions, paths or boat shores, were observed. In some places, there were traces on pine trees that Sami ancestors had been using the bark for making flour. There were traces of old storage places where meat had been preserved. More recent traces of human activity were related to elk hunting or fishing. The presence of reindeer herding could of course be seen everywhere, for example in the form of fences. One local woman told how “everything was marked” (Interview in Ohcejohka; August 2015, interview conducted in English), meaning that all the information was listed in written form, or mentally noted, or located on the official map of the area.

Sami knowledge on, for example winter and summer paths, fishing and hunting places and reindeer herding grounds, became intermingled with biological and geographic information about the area. The skills of those who were biologists were used and lists were then made about the biological aspects of the landscape. Some of the gathered information was new to everybody. Rare bird and plant species were discovered, as were a rare bird's nest and a critically endangered moss species, with Jeagelvárri being the only known location in Europe where it grows (Yle Saame, 2014). On another trip, organised later in the summer of 2014, the participants, fewer in number than on the first visit, focused on the flora of the area in question and made a more detailed list of rare and place-specific species. These lists were used as background information and saved for the future. In similar fashion, a type of technical counter-map was produced that made use of the state's authoritative representation of land to serve the activists' own goals. The map that the activists obtained from the National Land Survey was a provincial and topographical map of the area. On the map, and with the help of GPS, the activists pinpointed the culturally and ecologically significant places of the land that the mining company had reserved. They pinpointed many findings from the first exploratory journey. However, this map was not distributed to the public. The map was used as background information and it was part of the internal visual evidence of the information that was gathered, documented on the movement's private website.

3.4. The complaint letters

The rich narrative of land, the findings of this particular counter-mapping and counter-knowledge illustrated in Sections 3, 3.2 and 3.3, had to be articulated in text form to an outside audience. In Finland, administrative courts deal with appeals against the decisions of public authorities. A person whom the decision concerns may appeal to the court against a decision concerning the municipality in which that person is a legal resident. In the reservation stage and before actual exploration, when the company can only make preliminary investigations with little or no effect on the environment, an official appeal does not have much legal grounds. A complaint was still written against the Tukes reservation notification and sent to the court, HAO, in June 2014. It was signed by 39 claimants, including the municipality, the international Sami council that resides in Ohcejohka and the Norwegian Sami association. In the complaint, the claimants included the information gathered on the first trip as well as the other discussed values of the land. The Deatnu River's significance for wild salmon was underlined. They referred to the area's indigenous land owners, namely to reindeer herders and the Sami families who have inherited usufructuary fishing waters and hunting lands in the Jeagelvárri area, as the main people that the reservation will hurt most. The complaint addressed the language of the reservation notification, which had been published only in Finnish, but not in the local northern Sami language. The UN Human Rights Committee's articles regarding the rights of indigenous peoples and Finland's Constitutional Law Committee's view of Sami customary lands as comparable to land owning in the state were equally referred to.

The significance of Jeagelvárri as a reindeer herding ground and a calm reindeer calving area was stressed in the complaint. The activists explained in detail where the reindeer are herded in different seasons by the two reindeer herding districts that exist in the area, and where in the area the reindeer move. The cultural and ancestral and the reciprocal continuity of people, non-human dwellers and people's activities in the reservation area were highlighted throughout the complaint. Activists also formulated the complaint through a commodity aspect. They complained about the land being treated as a commodity for the benefit of others, thereby framing the issue of mineral resources as a means by which the mining company's reservation and priority rights to mineral exploration in the area threatened their own possibilities for making a reservation or applying for a mineral exploration permit. As the comment by one woman below shows, people felt that this was a way to gain justification and credibility for the complaint, despite the local people having no real mineral exploration interests:

This was, of course, not a real argument or even true, but it was one that could be accepted. (Interview in Ohcejohka, August 2015, interview conducted in English)

Following a normal procedure, HAO notified KDR in August 2014 of the complaint it had received, and requested KDR to respond with an explanation. By this time, Metsähallitus, the state authority governing the Kevo Strict Natural Reserve in the area, had sent a complaint as well concerning the reservation's location in Kevo, which HAO handled together with Ohcejohka's complaint. Lapland's Centre for Economic Development, Transport and the Environment had equally sent a similar complaint to that of Metsähallitus, which it later withdrew. The following month, KDR's lawyer sent an explanation to HAO, requesting that HAO not investigate the complaints because they were unfounded during the stage of a preliminary reservation. No other communication between the court and the company took place (author's personal communication with HAO, June 2018). After the complaint to the court, the activists persistently continued to state their claims in letters they sent to KDR, Rio Tinto and the Finnish government. One of the participants in the movement took the letter addressed to KDR personally to the company's headquarters in Ireland, but he could not locate anyone from the company who would receive the letter.

A sudden turn in events took place in spring 2015, when a response finally came regarding the movement's actions. *The Irish Independent* was the first newspaper to report in an April news article (O'Donoghue, 2015) that KDR would quit the area it had reserved in Ohcejohka. Just a few days later, a man from the movement who had signed the letter the activists had sent to Rio Tinto received a response from them, a letter dated 10 April 2015. Even though the response from Rio Tinto to the movement was of a general nature and only briefly mentioned the Ohcejohka case, its main message was that Rio Tinto wants to respect indigenous rights in its operations (personal communication with a representative of the movement). At the beginning of May 2015, Tukes announced in the local newspaper that KDR would quit the Ohcejohka reservation. HAO's decision came later, in July 2015, and it stated that the court would not investigate the complaint, as the reservation by this time had already lapsed. Since 2015, there have been no new developments in mining plans for the Ohcejohka region. While KDR has a diamond prospecting programme in Finland, its latest operations have centred more on eastern parts of the country.

4. Discussion

The Ohcejohka case is significant and revealing in several ways. It exemplifies local struggles and the tools at people's disposal to challenge an extractive capitalism that speculates on the existence of natural resources in areas that before were largely left alone. The process of mapping, calculating and envisioning natural resources for possible future exploitation profoundly influences the living conditions in local Sami communities, the choices that people have to make regarding the future, and it creates optimal circumstances for mining capitalism to expand and reserve new areas in northern Finland. In the context of this paper, land must be understood from a broad perspective because Sami land and its human and nonhuman aspects belong holistically to the people's overall social, cultural and political continuity (Olsén et al., 2017). The questions imposed by mining on the indigenous landscape are simultaneously questions regarding how people sustain their life worlds in all of the above-mentioned ways, and resistance to mining is about the claim for inclusion in decision-making practices and about what direction people's lives will take (Banks, 2002, 51).

It is notable that Arctic areas have been key sites in the mapping of resources and in the process of separating people from a particular space. A so-called "politics of erasure" has advanced the modernist project to flatten time and repress local traditions such that the Arctic has been seen as a "flat, white nothingness" or a "primordial natural world" that can be opened for resource extraction or saved as a wilderness park (Cruikshank, 2006; Hastrup, 2014; Demos, 2016, 93). In the case of this paper, the claim of an empty land was difficult to legitimate. People in the resistance movement organised their dynamic knowledge and processually made their indigenous and ontological claim to the land against the claim of a commodified environment. In the resistance movement, Sami ancestral knowledge of the land openly merged with other knowledge, such as the biological features of the area that some of the participants were experts on, and the land was mapped in different ways. Already known knowledge as well as new or lesser known knowledge of the Jeagelvárri area, such as knowledge about rare plants and birds and ancestral traditions, were shared by the activists. The resistance gained momentum from its cosmopolitan character, where the border river Deatnu was a unifying concern for a wider network of people. As a result, novel information about the place emerged and people became more aware of the externally mapped mineral resources of the region (see Bebbington et al., 2008b). Knowledges became intermingled during the course of events, where the notion of a mapped environment served as the central point of action for the complex ontological negotiation over the place's future.

The story of mining resistance in Ohcejohka highlights the consequences of and responses to mineral resource speculation in a dense and lived indigenous Sami land use framework. The mining resistance

in Ohcejohka can be understood as belonging to the existing worldwide territorial struggles, ontological conflicts (Blaser, 2013; Escobar, 2016) that defend pluralistic and indigenous understandings of land and the environment. Nature and landscape become part of the sphere of politics when these struggles challenge the dualist nature/culture distinction, the way the environment is represented as empty of people and the roles that have been attributed to indigenous peoples as passive victims of extractivism. As this paper demonstrates, the mapping and envisioning of resources is a central process in these struggles. I follow the view that modern mapping is a knowledge practice and a process that moulds reality and functions according to the ontology, where nature and resources are external entities to humans. However, I demonstrate that mapping of resources can equally function as a contrasting departure point for other realities and their mappings to unfold rather than as a means of imposing a “one world” reality. Mapping calls for a response, a return to what is real, enduring and vital within a specific context. If maps make reality, it is people who can further influence what follows by interacting with the maps through their own world-making and knowledge practices. Maps always enter a complex, multifaceted reality and its sphere of knowledges, and the outcomes of these processes are unpredictable.

5. Conclusion

In this paper I have described how, in the initial stages of mining in northern Finland, when mineral reserves are only speculated upon, the scientific and authoritative practice of mapping and locating minerals becomes a significant reality-making process for defining places as “mineral rich” and in reducing places to mere possible sites for extractivism. The process of modern mapping belongs to what many theorists have argued is the ontological nature/society divide in modern, industrial society. However, how mapping actually functions in environmental conflicts and inside their local ontological realities and knowledge spheres, what it provokes and changes, has not yet been studied widely. This paper has illustrated a case of Sami mining resistance against a Rio Tinto-linked company, KDR, and its preliminary reservation for diamond exploration in Ohcejohka. The outside mapping and representation of the Sami landscape through its minerals evoked a process whereby the Anti-Mining Coalition of the Deatnu Valley created counter-knowledge, a countering mapping of the land, through its shared and discussed ontological values. The results were articulated in complaints and with an overall pressure on outside interests, with the result that KDR quit its preliminary reservation. By turning to the centrality and real effects of mapping in environmental, ontological conflicts, I have demonstrated how mapping becomes equally recreated and renegotiated in these encounters, where the world is actively made. As the mining resistance in Ohcejohka tells, mapping is actually only a starting point for negotiations and enactments of what reality can be with all its intellectual plurality.

6. Data statement

The main data for this manuscript was collected in fieldwork in Utsjoki in the summer of 2015.

The manuscript is based on audio recorded and written interviews, as well as on secondary news articles, official documents, e-mail correspondence, and theoretical literature. For preserving the privacy and anonymity of the interviewees, I cannot enclose specific interview data with this submission.

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Conflict of interest

None.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.geoforum.2018.07.004>. These data include Google maps of the most important areas described in this article.

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